RIIO GD2 Business Plan Appendix

Property

December 2019

SGN
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Contents

1 Overview

Scope of this appendix

The infrastructure that supports our ability to manage and run our networks is, in many ways, as critical to our efficient operations as the pipes and components that make up the network. This appendix sets out our investment proposals for managing our Property portfolio, including its security requirements.

We split property into the following activities:

- Property development
- Property management
- Land regeneration
- Land remediation
- Estate management
- Security

This appendix covers both the capital and operational expenditure (capex and opex) requirements for GD2 across each of these activities. In GD2 we are proposing capex in property management only, including investing in solar photo-voltaic (PV) panels on all of our occupied sites as part of our Environmental Action Plan (EAP) (003). We are also proposing a suite of 'use-it-or-lose-it' uncertainty mechanisms for Biodiversity, Climate Change Adaptation and Renewable Energy.

Impact

Timely investment in our Property portfolio enables us to maintain an effective, reliable and efficient capability for the networks. In addition, our customers and other stakeholders have told us that maintaining current levels of safety and security is very important to them.

The proposed investment in our Property portfolio will ensure a safe and secure environment for our people, that we achieve statutory compliance and will ensure we are meeting our legislative duties under the Health and Safety at Work Act 1974, Occupiers Liability Act 1984 and the Environmental Protection Act 1990.

This, in turn, will ensure that we continue to operate our networks safely and efficiently.

Approach to GD2

In GD2, with regard to property development, we are not planning to purchase any additional property assets. We will instead focus on leasing property to provide the business with flexibility until the long-term future of gas is known. We will also incur professional services fees to help deliver and support business as usual (rent and rate) activities during GD2.

Our approach to property management including security is to continue with our ongoing programme of asset replacement based on the principles of the intended end of life asset upgrade and replacement for occupied buildings and security assets. Our proposed programme is based on legislative requirements, industry data and asset condition. In addition, following stakeholder feedback on our EAP, we plan to install PV panels to all of our occupied sites, along with smart Building Management Systems (BMSs) and LED lighting. We will also carry out biodiversity assessment surveys at these sites and ensure our assets are adapted to climate change as far as reasonably practicable.

The aim is to reduce business risk and maximise avoided costs through unplanned failure of building assets that could result in business disruption, safety and security related incidents and productivity loss through poor quality working environments. The strategy is modelled on BS 8544 Life Cycle Costs and the CROME model from the Chartered Institution of Building Services Engineers (CIBSE) Guide M – Maintenance Engineering and Management. Our opex requirements for GD2 cover property operations, maintenance and compliance costs.

With regard to land regeneration in GD2, all of our gas holders, with the exception of Provan, will be dismantled by the end of GD1. The gas holder frames at Provan are listed and so will require ongoing maintenance during GD2.

For land remediation we intend to continue to manage our statutory contaminated land risks (including site monitoring and assessment); and with regard to estate management we will manage the health, safety and compliance-based risks associated with redundant land.

Forecast investment

Our proposed investment plan for our Property portfolio in GD2 is £121.74m, split over opex and capex as follows in table 1:

Table 1: GD1 and GD2 investment forecasts

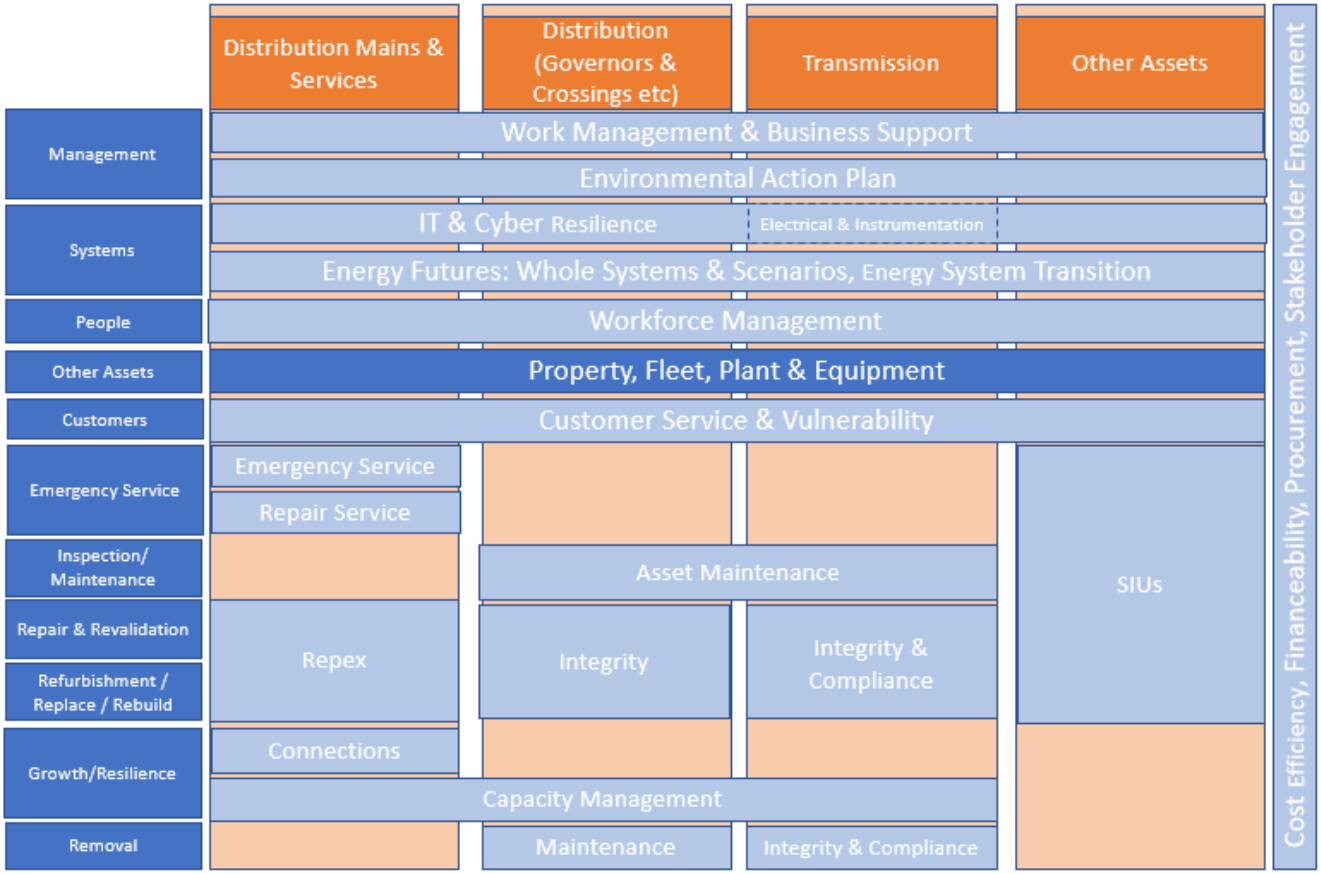
2018/19 Prices	Total GD1 Allowance £m	Annual average GD1 – over 8 years £m	Total GD2 Submission £m	Annual average GD2 – over 5 years £m
Capex	29.69	3.71	28.21	5.64
Opex	136.00	17.00	93.53	18.71
Total	165.69	20.71	121.74	24.35

The above GD2 costs include £18m for our EAP proposals across all our occupied sites.

2 Property within the Business Plan

As discussed above, in this appendix we set out our investment against allowance for our Property portfolio during GD1, along with our proposals for GD2. As can be seen from figure 1 below, our property assets are used across the breadth of the business.

Figure 1: Appendix structure



Until the government publishes its Heat Policy (currently planned for 2023), the long-term future of gas is uncertain. Therefore, to avoid the risk of stranded assets, our GD2 Business Plan is based on a low or no regret investment policy. Our '4Rs' asset strategy minimises investment: we Repair, Refurbish or Replace before we carry out more expensive Rebuild. Our investment strategy for our Property portfolio follows these principles.

Our proposals under our EAP include a suite of 'use-it-or-lose-it' uncertainty mechanisms to ensure that we maintain our low or no regret investment policy while addressing the desires of our stakeholders to do more to help tackle the climate crisis.

Investment decision packs

Our Engineering Justification Papers (EJPs) and, where appropriate, associated Cost Benefit Analysis (CBA) for our Property portfolio are listed below in table 2.

Table 2: EJPs and CBAs

Paper	Annex	Title
EJP and CBA	B.3	Property Management and Projects (including security)
EJP	F	Biodiversity
EJP	G	Climate Change
EJP and CBA	H	Renewable Energy
EJP and CBA	I	Energy Management and Utility Reduction

The EJPs and CBAs are discussed further in section 6 and are attached as annexes to this document. In addition, there are annexes detailing the justification for our proposed opex across our Property portfolio which are also discussed in section 6.

3 GD1 performance and learnings

3.1 Overview of service delivered

We own and maintain a number of different types of property, undertaking various roles to ensure we always provide a safe working environment and meet all relevant legislative requirements (see **section 3.2** below).

At the start of GD1 a property opex and capex allowance was provided and phased across the eight years (see section 3.5 below).

During GD1 we brought together the previously fragmented set of property related activities, allowing us to streamline our processes and improve efficiency. As discussed in **section 1** above, these are:

- Property development
- Property management
- Land regeneration
- Land remediation
- Estate management
- Security

3.2 Legislative background

Our Property portfolio is required to comply with a wide range of UK legislation mainly relating to health, safety and compliance. Legislation is important for several reasons, including setting standards and controls to govern any actions. The more significant legislation that define our decisions and work activities for property are detailed below:

- Building Act 1984 and Building Regulations 2006
- Confined Space Regulations 1997
- Health and Safety at Work Act 1974
- Construction (Design and Management) (CDM) Regulations 2015
- Control of Substances Hazardous to Health (COSHH) Regulations 1998
- Climate Change Act 2008
- Control of Asbestos Regulations 2012
- Environmental Protection Act 1990
- Management of Health and Safety at Work Regulations 1999
- Provision and Use of Work Equipment Regulations 1998
- The Working at Height Regulations 2005
- Workplace Health, Safety and Welfare Regulations 1992
- The Notification of Cooling Towers and Evaporative Condenser Regulations 1992
- F-Gas Regulations No 842 2006
- Electricity at Work Regulations 1989
- Lifting Operations and Lifting Equipment Regulations (LOLER) 1998
- Lift Regulations 1997
- Pressure Systems Safety Regulations 2000
- The Regulatory Reform (Fire Safety) Order 2005

- The Fire Safety (Scotland) Regulations 2006
- Disability Discrimination Act 2005
- Energy Performance of Buildings (Certificates and Inspections) Regulations 2007
- Control of Noise at Work Regulations 2005
- Waste Electrical and Electronic Equipment Regulations 2006

3.3 GD1 output delivery

The main property development drivers in GD1 were:

- Security of tenure – Business critical issues that have arisen associated with lease terminations and finite and unsustainable National Grid legacy lease arrangements mean that alternative property accommodation is required to deliver a safe network
- Improved location – Facilities designed to deliver better located assets for the operational workload
- Improved facilities – Fit for purpose operational property – e.g. Margate depot move from temporary structures on a gas holder site not owned by the regulated business without security of tenure to a fit for purpose office and internal and open storage facility

The main driver for property management was to provide business as usual facilities for all occupied buildings and deliver an ongoing asset replacement programme to statutory and regulatory compliance.

With regard to land regeneration, Ofgem funded a phased dismantling programme of 50% of our regulated gasholders (55 gasholders) over the eight-year period, with the remainder to be demolished in GD2. To date (December 2019), we have dismantled 49 gasholders and forecast to have completed 55 by March 2020, therefore delivering this GD1 output.

For land remediation, Ofgem did not define the number of sites which it expected us to address the statutory risk in GD1. We were required to report on the number of sites, the area of land, the routine site monitoring costs, the statutory land remediation costs and the non-statutory remediation costs. The work undertaken to September 2018 has resulted in the statutory risk being addressed on 67 sites totalling 57.2 acres across both our Scotland and Southern networks. We estimate there are a further 22 sites which will be considered off-risk by the end of GD1.

For security, the government sponsored Physical Security Upgrade Programme (PSUP) identified 14 Critical National Infrastructure (CNI) assets in GD1. Ofgem set an allowance of £39.2m at the May 2015 reopener to deliver PSUP across both our networks; we expect to deliver this output on time and to budget.

3.4 GD1 customer experience

In general, the department feedback from stakeholders in GD1 was positive.

Land regeneration worked closely with local and regional stakeholders (councils, Historic England and Historic Environment Scotland) by holding local consultation events, providing time lapse videos to local historical and industrial societies and sourcing viable options for retention of elements of gas holder structures, where this was deemed necessary due to the age of the structure or local interest.

Land remediation worked with the Environment Agency, the primary regulator for Groundwater and Contaminated Land, and they are pleased with the progress that has been made and the works that we have undertaken.

Estates management worked closely with the Health and Safety Executive (HSE) after the intervention at Croydon gas holder site.

Security worked carefully with both the Centre for the Protection of National Infrastructure (CPNI) and the Department for Business, Energy and Industrial Strategy (BEIS) on PSUP. To date, we have satisfied their

guidance documentation and provided them with reassurance via Value for Money (VFM) and Technical Assessment (TA) audits.

3.5 GD1 allowances and expenditure

The total GD1 Property allowances and actual expenditure (post overhead allocation) for each year of GD1 are detailed in the table 3 below.

Table 3: Combined GD1 capex and opex – post overhead allocation

Combined	13/14 £m	14/15 £m	15/16 £m	16/17 £m	17/18 £m	18/19 £m	19/20 £m	20/21 £m	Total £m
Allowance	25.62	19.32	18.52	21.34	22.67	22.27	18.00	17.95	165.69
Actual	12.63	17.73	25.29	19.8	18.54	25.52	16.18	17.34	153.03
Variance	**12.99**	**1.59**	**-6.77**	**1.54**	**4.13**	**-3.25**	**1.82**	**0.61**	**12.66**

See comments detailed in tables 4 and 5 below for increased spend in financial years 2015/16 and 2018/19.

Capex allowance

The capital expenditure allowances for Property were described as 'Land and Buildings' and 'Furniture and Fittings' in GD1. The activities that these allowances covered were property development, property management and security. Tables 4 and 5 provide a comparison of allowance against actual spend for capex and opex.

Table 4: Capex

Capex	13/14 £m	14/15 £m	15/16 £m	16/17 £m	17/18 £m	18/19 £m	19/20 £m	20/21 £m	Total £m
Allowance	8.62	2.32	1.52	4.34	5.67	5.27	1.00	0.95	29.69
Actual	2.33	3.70	5.88	5.37	2.71	2.85	6.21	7.37	36.41
Variance	**6.29**	**-1.38**	**-4.36**	**-1.03**	**2.96**	**2.42**	**-5.21**	**-6.42**	**-6.72**

Increased spend in financial years 2015/16, 2019/20 and 2020/21 is due to the delivery of strategic property development projects of new offices or depots.

Opex allowance

The operational expenditure allowance for Property in GD1 is detailed in the table below.

Table 5: Opex

Opex	13/14 £m	14/15 £m	15/16 £m	16/17 £m	17/18 £m	18/19 £m	19/20 £m	20/21 £m	Total £m
Allowance	17.00	17.00	17.00	17.00	17.00	17.00	17.00	17.00	136.00
Actual	10.30	14.03	19.41	14.43	15.83	22.67	9.97	9.97	116.62
Variance	**6.70**	**2.97**	**-2.41**	**2.57**	**1.17**	**-5.67**	**7.03**	**7.03**	**19.39**

The increased spend in financial years 2015/16 and 2018/19 is in relation to gas holder dismantlement and

environmental liabilities being transferred from the regulated business to an unregulated company. This is detailed further in the Business Plan – Gas holder/Land strategy.

3.6 GD1 lessons learned

What has worked well

Bringing together the fragmented property activities and subsequent development of specification and scope resulted in cost effective improvements to site assets and welfare provision.

Developing effective internal and external working relations between our Authorised Engineers (AEs) and our contractors' Competent Persons (CPs) enabled an efficient and safe programme of work to be completed for all projects in a gas environment.

What not so well

Property development was generally driven by relocation and new property acquisition and leases. A clearer operational strategy for GD2, based on no regret's capex, will help deliver enhanced performance and flexibility aligned to regulated outputs.

The property management programme did not commence until 2015/16 in its current form. Initial projects suffered due to a lack of robust early engagement with third parties.

In general, gas holders (land regeneration) were dismantled within the allowances provided, apart from gas holders located in London. This was mainly due to constraints specific to London in terms of space on site to dismantle safely, plus access challenges to and from site which drove costs up.

Summary

Lessons learned from GD1 projects have resulted in the development and evolution of our large capital project governance process which is based on an industry-proven five-gate procedure. This starts with the project opportunity assessment, then runs through project development, refinement and execution. It completes with hand over to operation and a post project evaluation process.

In addition, we have introduced NEC3 financial contract management to manage costs and change management. NEC3 is a modern contract which takes a much more collaborative approach to construction, project management and risk.

4 Stakeholder insight

Overview

We have undertaken an extensive programme of engagement and research with customers and stakeholders in developing our Business Plan. This is described in more detail in chapter 4 of our Business Plan and the Enhanced Engagement appendix.

A key finding from our programme of engagement is that while both customers and stakeholders view keeping costs down as an important priority, they are supportive of investment in areas such as future energy solutions and minimising our environmental impact [1] [2] [3].

A step towards decarbonisation is reducing the carbon footprint of our Property portfolio. At our Shared Future specialist stakeholder event we discussed options relating to the level of ambition we could adopt in reducing the carbon emissions associated with our energy use in our offices and depots[4]. We also explored these considerations with customers at our qualitative research workshops[5]. In our 'willingness to pay' research, customers have valued different improvements under consideration. Investment to achieve environmental benefits consistently attracted the greatest level of support from customers[26]. Our business plan acceptability testing also indicated that domestic and SME business customers viewed proposals to reduce our carbon footprint by 25% as highly acceptable[7].

To reflect stakeholder and customer priorities, all our proposed investment in GD2 will utilise the latest, energy efficient assets, fixtures, furnishings and equipment. This is discussed further in section 5 below, along with our proposed Property portfolio activities under our EAP discussed in section 6.8. In addition, our land remediation and regeneration activities will ensure that we proactively address hazards or contaminants and make the best, most environmentally-beneficial use of redundant land.

Customers also rate acting safely and keeping the gas flowing as high importance[8] [9] and expect us to maintain high levels of safety and reliability. Infrastructure such as our Property portfolio supports our ability to manage and run our networks safely and efficiently. Replacing end-of-life assets, and a comprehensive maintenance regime, also helps to ensure overall reliability and keeps our costs down. Investment in security measures ensures we are able to keep critical sites secure. We asked stakeholders for their views on security at our November 2018 'Moving Forward Together' workshops[10]. Stakeholders suggested that they would expect us to prioritise sites to address those most critical first and install security measures that are proportionate to the risk level and criticality of the site. There was also strong support for investing in physical security to prevent attacks from our willingness to pay research, with 82% of customers strongly or slightly supporting investment in this area[2].

[1] Stage 1: Explorative Qualitative Workshops and interviews (ref 002)
[2] Stage 3: Conjoint and WtP Summary report (ref 005)
[3] SGN Sustainability Roundtable – London and Glasgow (065,066)
[4] Share Net Zero Future round table event – Scotland (ref 090)
[5] Shaping the Business Plan Qualitative workshops – Environmental Action Plan (ref 084)
[6] Stage 3: Valuation Phase (Conjoint and WtP) Summary report (ref 094)
[7] Business Plan Acceptability Testing Phase 2 (ref 079)
[8] Stage 2: Max Diff Prioritisation Phase (ref 003)
[9] SGN Business Plan Acceptability Testing Phase 1 (ref 078)
[10] MFT Workshop November 2018 London and Edinburgh (ref 013, 014)

5 GD2 Cross sector issues

Our customers' concern about the environment and climate change is at the heart of our commitment to build a shared future. We are leading and supporting many projects with electricity and gas operators in Scotland and southern England, designed to provide evidence that will help define our low carbon energy future.

In addition, we have carried out a wide-range of stakeholder engagement activities with the objective of informing our decision-making processes relating to innovation.

5.1 Decarbonisation and whole system

Our Property portfolio accounts for nearly 11% of our scope 1, 2 and 3 emissions.

As noted above, as part of our EAP we are planning to address the following at our occupied sites:

- Biodiversity
- Renewable Energy
- Energy Management and Utility Reduction
- Climate Change

These are discussed further in section 6 below and our EAP (003).

5.2 Innovation

Innovation is embedded in our culture. Our achievements in GD1 and proposals for GD2 are discussed in detail in Appendix 008. With regard to our Property portfolio, innovation can take many forms.

For example, for land remediation, traditional site investigation techniques, such as mechanical excavation and cable percussion drilling, were replaced early in the programme with techniques such as vacuum excavation and rotary drilling to lower the risk of damage and disturbance to the operational gas apparatus on the sites. This meant that data could be collected from areas of sites that had previously not been investigated and assessments, rather than assumptions, of the statutory risk that existed could be made. Adopting these techniques meant an increase in anticipated costs, but these were offset by the reduction in risk that was being identified.

Throughout GD1, we have developed and encouraged new working practices such as hot desking, Skype for Business and remote working that have helped to improve efficiency. We have also established remote monitoring of site security and are proposing to ensure our systems meet the latest industry standards in GD2. Our proposals to install PV panels and introduce energy management systems as part of our EAP will change the way we use energy in our properties.

5.3 Resilience

To improve environmental outcomes within our property management investment we are looking to:

- Replace assets identified annually via the asset register as being at their end of life, with enhanced specifications through advancements in smart technology, innovation and materials development. We will focus on operational, financial and environmental sustainability and seek to achieve an enhanced working environment.
- Energy efficiency and sustainability will be delivered to a new corporate standard, comparable to the Building Research Establishment Environmental Assessment Method (BREEAM) 'Very Good' rating. BREEAM is the world's longest established method of assessing, rating, and certifying the sustainability of buildings, and regarded as the leading sustainability assessment method for project planning for the whole life of a building.
- Install renewable energy solutions in several of our key locations. We have assessed potential for

renewable energy (solar) at 20 of our highest energy use sites during 2018. Adopting renewable at these locations could reduce our total energy use by approximately 16%.

- Planned internal reviews and user satisfaction surveys will monitor progress towards how we have contributed to an improvement in employee engagement, and we intend to partner with recruitment teams to monitor candidate and new joiner feedback relating to our work environment.

This is discussed in more detail in the EJP for the proposed capital investment (see section 6.5 below).

6 GD2 Activity breakdown

6.1 Approach to GD2

For property development in GD2, we are not planning to purchase any additional land. We will instead focus on leasing property to provide the business with flexibility until the long-term future of gas is known.

With regards to property management, many of our occupied premises are reaching or exceeding their intended life span. At more than 20 years old, they show signs of significant wear and tear, are inefficient and out-dated. We have steadily increased employee numbers working at sites and capacity at some locations is inadequate. Warmer summers and an increase in technical equipment have pushed the loads on our electrical and mechanical systems over and beyond their original design capabilities.

We are developing a fully costed property projects programme for each year of GD2, using an accurate, up-to-date and comprehensive asset register that will be fully populated by the end of GD1.

Property asset lifecycle replacement is an ongoing programme of works. Asset replacement frequencies are based on industry guidance from CIBSE Guide M – Maintenance Engineering and Management, Building Services Research and Information Association (BSRIA), Business Focused Maintenance and SGN Property policies. A sample of key indicative asset replacement frequencies (non-exhaustive) is outlined in our EJP (see section 6.5 below).

In addition, as part of our EAP, we are proposing to install solar PV panels on all of our occupied sites and on our property at Glenmavis, along with smart BMS and LED lighting. We will also carry out biodiversity assessment surveys at these sites and ensure our assets are adapted to climate change as far as reasonably practicable.

Regarding land regeneration, following the recent decision to list the two gas holders at Provan, we now have a statutory requirement to maintain these structures. The costs fulfil our obligations under relevant legislation to ensure our reputational image is protected and to have a safe set of listed structures that pose a low health and safety risk to our employees and contractors.

The land remediation costs take into account the investment required to relocate gas plants prior to the remediation works being undertaken. They are based on the site-specific costs provided by the respective Asset Engineering Managers. In respect of the actual remediation costs, the environmental consultants, Advisian, was appointed to review existing site data and historical site plans across our portfolio. Advisian used its experience of assessing former coal gas production works and knowledge of the processes that typically determine the existence of statutory risk.

The objective of estates management is to manage the health, safety and compliance-based risks associated with redundant land in our ownership. These risks typically arise through sites quickly becoming overgrown, where they can provide habitats for protected species, become infested with invasive weeds, or pose a risk to health and safety and compliance by concealing site hazards to employees, visitors or trespassers. Our approach to managing these risks is to undertake regular site inspections, which will allow the condition of sites to be monitored and an ongoing programme of site maintenance throughout GD2 to be implemented. This will avoid sites reverting to being health and safety risks or in a non-compliant condition.

The investment proposed for security in GD2 includes a capital asset upgrade and replacement programme for security assets across both Scotland and Southern networks. The programme of work includes installation of equipment where required and replacement of assets that are at end of life based on industry standards at our offices and depots. In some cases, the current security infrastructure and measures that are no longer fit for purpose, either through outdated technology or inadequate capability.

Our aim is to provide a safe working environment for our people and a secure supply of gas for our customers. We will achieve this by maintaining the operational effectiveness and integrity of our existing security arrangements and assessing and implementing security countermeasures against perceived threats.

There is significant UK legislation as well as local planning requirements that must be adhered to as we seek to maintain and develop our Property portfolio; the main requirements are outlined in section 3.4 above. In meeting these requirements, in general, all property projects will undergo a competitive tender process to ensure that projects are cost efficient. This is discussed further in section 6.9 below.

6.1(b) Policy

General changes in government policy are unlikely to affect our proposed investment for our Property portfolio. However, the government's Heat Policy proposals, currently expected in 2023, could impact the future of the gas networks. Regardless of any policy change there will be a requirement for the networks and supporting infrastructure (e.g. property) for the foreseeable future.

6.1(c) Scenarios and sensitivities

Our proposed investment in our Property portfolio for GD2 is based on our low/no regrets policy to minimise the risk of stranded assets. This scenario is predicated on our 4Rs asset strategy that minimises capital investment: we will always **Repair**, **Refurbish** or **Replace** before we carry out more expensive Rebuild**.**

6.2 GD2 outputs and price control deliverables

Our property development output is to ensure optimal operational security of tenure, ensuring quality assets and location for our employees. Cost efficiency is discussed in section 6.7, with further detail provided in Annex A.

Our property management and security outputs are like-for-like replacement of end of life or critical/compliance assets. The programme will enhance efficiency, improve employee safety and wellbeing and reduce our impact on the environment. We are proposing these outputs are delivered as Price Control Deliverables. The output categories are detailed in table 6:

Table 6: Output categories

Assets Classification	Description
Substructure	Drain and sewer systems, sewers, interceptors, pits, gas and venting systems. sustainable urban drainage systems.
Superstructure	Fire compartmentation, fire escapes and structural work and roof coverings. Ducts and risers, frames, upper floors, walkways, landings, roof drainage, roof trusses, beams. For acoustic performance, low carbon sourcing. Recycling and re-use at end of life.
Internal Fabric	Internal doors, ceilings, corridors, floor coverings, windows, internal paintwork. Procured to meet required acoustic and air quality. Sufficient insulation properties to achieve stated energy efficiency performance targets.
Fixtures, Furnishings and Equipment	Refrigerated catering appliances, emergency voice systems, local exhaust ventilation, fire alarm systems and equipment, fire doors, water treatment systems, sprinkler systems, toilets, cubicle systems, vanity ware, kitchens, tea points, break out areas, partition systems, appliances, blinds, notice boards, cupboards, storage systems, signage, lockers and changing facilities, desks, chairs, meeting room furniture, AV equipment. Designed for durability and maximum lifecycle appropriate to use.
Mechanical and Electrical Services	Non-critical air-conditioning systems, building control systems, non-essential electrical components, ICT networks, non-emergency lighting, mains electric incomer, emergency lighting, fire and smoke dampers and actuators, gas boilers and burners, water and heat pumps, critical air conditioning equipment, building management systems.
External Fabric	Paths and road surfaces, external lighting. External furnishing, signage, cycle shelters, landscaping, car parking.
Security	CCTV, automated access control, intruder detection systems, intercom, gates, barriers and fencing.

Delivery of the programme ensures property assets including security comply with relevant legislation and codes of practice, and that structural, fabric, mechanical, electrical, fixture and fitting assets remain in a safe, efficient and fit for purpose state. An effective operations and maintenance strategy will also ensure building related plant and equipment are operating within design parameters and our employees are working in appropriate welfare environments. Again, cost efficiency is discussed in section 6.7, with further detail provided in Annex B.1.

Our proposed land regeneration output is to maintain the two listed gas holder structures at Provan in accordance with our duties as owner of a listed structure. Annex C provides details of the £8.65m opex investment requirements in GD2. These costs have been provided by Craddys (specialist contractor) who was instructed to undertake a feasibility study into the refurbishment of the guide frame structures and provide some preliminary costing advice.

For land remediation, we will continue to manage the statutory contaminated land risks associated with our land portfolio. The process of site investigation, monitoring, risk assessment and remediation is detailed in our Site Assessment and Remediation procedure and broadly follows the principles defined by the Environment Agency (and adopted by SEPA) in Model Procedures for the Management of Land Contamination (CLR 11) and the CIRIA document Contaminated Land Risk Assessment – A guide to good practice (C552). This is attached as part of Annex D, which provides further detail on the £23.42m proposed expenditure.

Our proposed estates management activities will ensure that we continue to manage the health, safety and

compliance-based risks associated with our redundant land. The GD2 output will be to manage our portfolio in accordance with our obligations under the Health and Safety at Work Act 1974 and Occupiers Liability Act 1984. Our estates management scope of works is included as part of Annex E and provides further detail of our proposed £2.95m expenditure.

6.3 Bespoke outputs

Our EAP has been developed following extensive stakeholder engagement, where it has become apparent that the environment, sustainability and climate change have risen rapidly up the public agenda. In response to this feedback, we aim to reach net-zero greenhouse gas emissions by 2045. Reducing our property carbon footprint will feed in to this target.

Currently, our electricity usage from our occupied and operational sites contributes to 9% of our business carbon footprint. To reduce this, we are planning to install solar PV panels across our occupied sites, along with BMSs and LED lighting. We also intend to establish an existing biodiversity profile on our property and land through a series of surveys and, where appropriate, implement enhancement programmes to improve their biodiversity. And we intend to conduct Climate Change Adaptation (CCA) surveys at our occupied sites to identify vulnerable sites and to carry out remedial action where appropriate.

We are, therefore, proposing three bespoke outputs for our Property portfolio as part of the EAP: one for Renewable Energy and Energy Management and Utility Reduction; one for biodiversity; and one for CCA. These are discussed below.

Renewable Energy and Energy Management and Utility Reduction

We aim to make costs savings to our property opex by installing solar PV technology. We want to provide a Property portfolio to serve our customers that operates in a cost efficient and environmentally friendly way. The strategy to enable this vision is to be net-zero with carbon neutrality by installing solar PV to reduce energy expenditure. In addition, we will install technological measures at each site in line with the pathway to net-zero model and science-based targets discussed in our EAP (003). Successful delivery would result in networked BMS systems installed at main offices and depots, linked to main plant and lighting systems with an efficient controls programme delivering the projected savings. Reductions would be evidenced by year-on-year utility consumption at sites. The combined projected total tonnes of carbon saved across both outputs is 2,635 tCO_2, which would represent a 32.9% saving against our baseline.

Biodiversity

Biodiversity is the variety of life found on earth. It includes all species of plants and animals, their abundance and genetic diversity. Biodiversity underpins our lives and livelihoods and supports the functioning and resilience of ecosystems.

As part of our EAP, our aim for GD2 is to establish the existing biodiversity profile on these parcels of land through a series of surveys and, where appropriate, implement enhancement programmes to increase the biodiversity of the ecosystems existing on them.

Climate Change Adaptation

Based on current policies, changing weather patterns due to climate change could mean an average warming of close to 4°C along with increased likelihood of extreme weather events. The highest risks for SGN are flooding, coastal and river erosions and extreme temperatures. Our assets most at risk are above-ground; and the risk at our occupied sites is most likely flooding. We have developed a five-stage plan, discussed in our CCA EJP, to tackle the risk of climate change on our occupied properties. We propose to carry out CCA surveys for our occupied sites during the first two years of GD2 and then take the appropriate remedial action during the rest of GD2.

All three of these bespoke outputs will form part of our proposed EAP ‘use-it-or-lose-it’ suite of uncertainty

mechanisms. The requirements for each output/uncertainty mechanism is discussed in section 6.8 below.

6.4 Investment in existing assets – CBA/NARMs

Property management

Our investment will include:

Substructure assets. We plan to install smart technologies and environmental controls, such as sustainable urban drainage systems (SUDS), designed to reduce surface water runoff and pollutants. We are currently evaluating the opportunity to install SUDS at our sites and use new technology to detect pollutants, prevent leakages and sound alerts to reduce contaminated runoff into the sewerage system.

Superstructure assets. We are looking at opportunities to ensure that any replacement or upgraded materials will meet enhanced BREEAM requirements for acoustic performance, ethical and low carbon sourcing, and be future-proofed to ensure appropriate recycling and re-use at end of life.

Internal fabric. We are looking to ensure that all materials and products will be designed and procured to meet high standards of acoustic and air quality performance, with sufficient insulation to achieve our energy efficiency performance targets, reduce heat loss and improve sound proofing.

Fixtures, fittings and equipment. These products are most closely associated with comfort and personal work spaces. Desks and chairs must maintain the right levels of ergonomic, safety and comfort performance for our employees. Products in this category can have an effect on inside air quality, energy efficiency, noise pollution and other environmental factors. Advancements in office IT systems can also enhance the employee experience, leading to productivity gains as well as improved employee satisfaction.

Mechanical and electrical services. We are evaluating opportunities to embed smarter building systems such as lighting and air conditioning. Systems will be designed to meet enhanced energy efficiency targets and conservation, making use of smart technology to automatically adjust heating, lighting and air conditioning in response to changing outside conditions and the numbers of people on-site at any given time.

External fabric. We are evaluating opportunities to deploy new smart technology on external lighting systems, designed to minimise light pollution and maximise efficiency.

Automated Access Control (AAC). We currently utilise two AAC platforms: the legacy Proximity Access Control (PAC) system installed by SSE and our replacement, Gallagher. We propose to address all sites that have not been migrated from PAC to Gallagher.

Closed Circuit Television (CCTV) and monitoring. We currently utilise ageing passive infrared detectors and analogue cameras, with poor pixels, black and white imagery, slow response times and limited night time capability, all being monitored by the SSE Alarm Receiving Centre (ARC). Replacement cameras will be digital, colour, night time capable and provide 25 frames per second response time. We propose to address all of those identified sites with obsolete CCTV and not yet migrated to SGN ARC in Horley.

Fencing, barriers and gates. Some SGN sites are currently protected by inadequate fencing such as chain link or palisade which do not provide adequate measures against illegal/unauthorised entry. In addition, some sites are currently not protected with suitable gates or any external barriers, which presents an opportunity for unauthorised entry and possible threat to employees. We propose to address those identified sites with effective and cost-efficient fencing (such as ‘Super 6’ or other suitable weld mesh fencing), improved gates and fencing.

Our cost projections for property management including security are based on industry standard costs and validated using procurement data from projects delivered in GD1. We use a combination of SPONs Architects and Builders Price Book 2019 data and benchmarked data from procured projects delivered in GD1. Our EJP provides details of our cost model (see section 6.5 below).

6.5 Engineering Justification Papers

There are five EJPs, some with associated CBAs, for our Property portfolio. Table 7 below provides a summary of each of these papers

Table 7: Summary of property papers

Paper	Annex	Title	Investment £m	Uncertainty Mechanism	Summary and key findings
EJP – SGN Prop 005 **CBA - SGN Prop 005**	B	Property Management and Projects	12.56 – (upfront)	N	Capital asset upgrade and replacement programme. Option 1 returned a positive CBA which proposes the pre-emptive replacement of property assets against base line.
EJP – SGN Prop 001	F	Biodiversity	2.02 – (upfront) + 2.49 (use-it-or-lose-it)	Y	Our biodiversity is unknown at present. We propose a staged approach by surveying the identified sites and where appropriate, implement enhancement programmes to increase the biodiversity of the ecosystems existing on them.
EJP – SGN Prop 002	G	Climate Change Adaptation	0.52 (upfront) + 9.83 (use-it-or-lose-it)	Y	We have proposed a staged approach again with the intention of carrying out CCA surveys at our occupied sites. Upon review of the results, a cost benefit analysis will be completed for each relevant site.
EJP – SGN Prop 003 **CBA – SGN Prop 003**	H	Renewable Energy	1.71 (use-it-or-lose-it only)	Y	Installation of solar PV technologies. Option 3 is the preferred option while not returning the most economically advantageous positive CBA. However, it aligns with our stakeholder feedback and customer expectations of a high ambition EAP.
EJP – SGN Prop 004 **CBA – SGN Prop 004**	I	Energy Management and Utility Reduction	1.62 – (upfront)	N	Installation of BMS and LED lighting systems. Option 2 is the preferred option which returns a positive CBA at our large and medium occupied sites.

Our proposals for tackling biodiversity and CCA, and for installing renewable energy and smart energy management systems at our occupied sites all feed in to our EAP that can be found at Appendix 003 to our Business Plan. Because of the uncertainty surrounding these proposals we are putting forward a suite of 'use-it-or-lose-it' uncertainty mechanisms for our EAP. The property inputs to this are discussed in section 6.8 below.

6.6 Investment in new assets

We are not proposing to invest in any new assets during GD2.

6.7 Cost efficiency

For property development, in line with our low/no regrets investment strategy, we intend to lease property rather than buy. This will provide the business with flexibility until the long-term future of gas is known. We will also incur professional services fees to help deliver and support business as usual (rent and rate) activities during GD2. Cost projections are based on historical performance and industry benchmarking. Annex A provides an independent third-party assessment of our leasing policy and its cost efficiency.

For property management, cost projections have been based on historical performance and industry benchmarking which are discussed further in Annex B.1. Cost efficiency will be obtained through effective asset maintenance, effective procurement of contracts and frameworks, demonstrated by procurement evidence and industry benchmarking. During GD2 we will utilise condition survey data to extend asset life where applicable.

For land regeneration, our forecast costs are based on the results of a feasibility study from an experienced contractor. We will competitively tender to ensure cost efficiency; further details are provided at Annex C.

For land remediation, the exercise the environmental consultants Advisian undertook involved standardising the way risk is estimated across the portfolio and producing remediation cost estimates in a consistent and transparent manner for sites where there was a high risk of statutory risk existing. These remediation cost estimates have recently undergone the scrutiny of our external auditors. In addition to this, all projects will undergo a competitive tender process. Where appropriate, we would expect the market to adopt innovative techniques to make cost savings. Details of the proposed works and forecast costs are provided at Annex D.

For estates management, cost efficiencies will be achieved through competitive tendering. In addition, a range of site hazards have been identified and costed against actual quotes received from framework contractors from a sample of sites. Annex E provides a breakdown of costs.

Finally, for security, capital efficiencies will be realised by working with a mature framework which attracts discounts. Operating cost projections are based on historical performance and industry benchmarking. Efficiency will be demonstrated through a competitive tender process, which is discussed further at Annex B.2.

In summary, for our Property portfolio we have carried out comprehensive industry benchmarking; we have utilised expert consultants and framework contracts to identify efficient costs; and we will competitively tender where appropriate.

6.8 Managing uncertainty

As discussed, we are proposing a suite of 'use-it-or-lose-it' uncertainty mechanisms for our EAP. The Property portfolio inputs are outlined in the table below. Full justification is provided in Annexes F, G and H. Table 8 below provides a summary from the relevant EJPs for the EAP.

Table 8: Uncertainty mechanism summary

Uncertainty Mechanism Questions	Biodiversity	Climate Change Adaptation	Renewable Energy
What is the issue/risk?	The existing ecosystems and biodiversity profiles of our sites are currently unknown.	The uncertainty around climate change is highly volatile.	The uncertainty around whether sites identified will be appropriate for Solar PV.
Where does the ownership of risk lie?	The ownership of risk lies with the customer.	The ownership of the risks lies with SGN.	The risk lies with the installer.
Materiality of issue	Only estimated costs have been provided.	The issue of climate change could have far reaching costs.	Only estimated costs have been provided.
Frequency and probability of issue	The government's 25 Year Environmental Plan places strong emphasis on land owners increasing natural capital on their sites through the way they manage land. This plan was introduced in 2018 and will transcend the GD2 period.	During GD2 impacts are expected to be felt more strongly and frequently.	Failure to implement the proposed programme of works is highly likely to fail to deliver the stated EAP targets.
Proposed mechanism	We are proposing the use of the 'use-it-or-lose-it' mechanism to provide funding of £2.49m.	We are proposing a 'use-it-or-lose-it' mechanism, providing funding of £9.83m.	We are proposing the use of the 'use-it-or-lose-it' mechanism to provide funding of £1.71m.
What are the justifications for the mechanism?	We will get a better understanding of how many identified sites are feasible for implementing the project.	This will allow us to better understand what sites are at risk and where to prioritise our investments.	It will allow us a better understanding of how many identified sites are feasible to install solar PV.
What are the drawbacks of the mechanism?	There is an element of uncertainty in the number of sites where biodiversity enhancement projects are feasible.	The uncertainty is high, and costs may be significantly higher or lower than forecasted.	There is an element of uncertainty in the number of sites where solar PV projects are feasible due to the risk identified.
Can the drawbacks be reduced?	The drawbacks of uncertainty are inherent with managing our portfolio to promote biodiversity.	The drawbacks of high uncertainty are inherent with climate change risks, there is little way to predict how it will affect our sites without surveying them further.	There is little way to understand the renewables profile across the sites without undertaking pre-installation surveys for each site.

How does the mechanism deliver value for money?	It ensures that funding is available to undertake biodiversity projects where they have been demonstrated as being feasible to implement and allows for any surplus funding to be returned.	Completing the surveys and prioritising adaptation measures will put us in the best position to deal with the effects of climate change efficiently and cost effectively.	It ensures that funding is available to undertake renewable projects where they have been demonstrated as being feasible to implement and allows for any surplus funding to be returned.
Treatment in Business Plan Data Templates (BPDTs)	The costs have been included in the 3.05 (Other capex) section of the BPDT.	The costs have been included in the 3.05 (Other capex) section of the BPDT.	The costs have been included in the 3.05 (Other capex) section of the BPDT.

6.9 Competition

We will use competition to secure best price by following our internal procurement process for all capital expenditure. This will involve sourcing suppliers via Achilles, a platform that helps identify, assess, qualify and monitor suppliers throughout the supply chain to help reduce operating costs. We will agree to terms, acquire goods, services, or works from an external source, often via a tendering or competitive bidding (one-off contracts). It is likely that we will enter into framework agreements on larger programmes of work; such as our asset upgrade and replacement programmes.

6.10 Real price effects

We are not expecting any costs different from CPI for our Property portfolio in GD2.

6.11 Financial summary

Tables 9 to 11 below provide a comparison of combined capex and opex spend for GD1 and GD2. Tables 12 and 13 provide a detailed breakdown of the capex and opex requirements for GD2.

Table 9: GD1 spend pre overhead allocation

GD1 Combined	13/14 £m	14/15 £m	15/16 £m	16/17 £m	17/18 £m	18/19 £m	19/20 £m	20/21 £m	Total £m	Avg GD1 Spend over 8 years £m
capex and opex	16.26	21.58	30.63	23.92	22.94	32.02	20.12	21.28	188.75	23.59

Property opex is subject to allocation across activities as per our allocation of overheads. The above table includes opex costs pre-allocation.

Table 10: GD1 spend post overhead allocation

GD1 Combined	13/14 £m	14/15 £m	15/16 £m	16/17 £m	17/18 £m	18/19 £m	19/20 £m	20/21 £m	Total £m	Avg GD1 Spend over 8 years £m
capex and opex	12.63	17.73	25.29	19.8	18.54	25.52	16.18	17.34	153.03	19.13

The table represents actual spend for the first six years and forecasted spend for the remaining two years of GD1. Actual costs are significantly higher than average in FY 2015/16 and 2018/19 due to the delivery of strategic Property Development projects of new offices and depots and to gas holder dismantlement and environmental liabilities being transferred from the regulated business to an unregulated company. The above table includes opex costs post allocation.

Table 11: GD2 spend

GD2 Combined	21/22 £m	22/23 £m	23/24 £m	24/25 £m	25/26 £m	Total £m	Avg GD1 Spend over 5 years £m
capex and opex	26.71	29.22	23.91	21.38	20.48	121.74	24.35

The average forecasted spend in GD2 is approximately £5m more a year than GD1. The headline reason for the majority increase is the additional £18m costs for the proposed initiatives as part of our EAP.

Table 12:GD2 opex requirements

Opex	BPDT ref and row	21/22 £m	22/23 £m	23/24 £m	24/25 £m	25/26 £m	Total £m
Central – staff, utilities, rent and rates	2.08 Rows 12, 13, 22, 66, 90, 91, 115, 116	6.12	6.51	6.44	6.44	6.44	31.95
Property Development	2.08 Row 14	0.13	0.10	0.10	0.10	0.10	0.53
Property Management and Projects	2.08 Rows 68, 93, 118	1.61	1.69	1.69	1.67	1.63	8.29
Land Regeneration	2.19 Row 23	3.78	4.83	0.01	0.01	0.02	8.65
Land Remediation	2.20 So Row 12 Sc Row 12	3.74	6.43	6.10	3.62	3.53	23.42
Estates Management	2.08 Row 18	0.59	0.59	0.59	0.59	0.59	2.95
Security	2.08 Row 19	0.84	0.83	0.83	0.83	0.82	4.15
Soft FM	2.08 Rows 67, 92, 117	2.21	2.21	2.21	2.21	2.21	11.05
Biodiversity	2.01 Row 181	2.02	–	–	–	–	2.02
Climate Change Adaptation	2.01 Row 181	0.52	–	–	–	–	0.52
Total	**–**	**21.56**	**23.19**	**17.97**	**15.47**	**15.34**	**93.53**

Table 13:GD2 capex requirements

Capex	BPDT ref and row	21/22 £m	22/23 £m	23/24 £m	24/25 £m	25/26 £m	Total £m
Property Management and Projects	3.05 So Row 175 Sc Row 174	2.54	2.52	2.51	2.50	2.49	12.56
Biodiversity	3.05 So Row 176 Sc Row 175	-	0.38	0.95	0.94	0.22	2.49
Climate Change Adaptation	3.05 So Row 177 Sc Row 176	-	2.48	2.46	2.45	2.44	9.83
Renewable Energy	3.05 So Row 178 Sc Row 177	0.99	0.65	0.02	0.02	0.03	1.71
Energy Management and Utility Reduction	3.05 So Row 179 Sc Row 178	1.62	–	–	–	–	1.62
Total	–	**5.15**	**6.03**	**5.94**	**5.91**	**5.14**	**28.21**

6.12 Assurance

Our business plan, including appendices, has been subject to a rigorous assurance process which is detailed in Chapter 3 of the Plan and the Board Assurance Statement.

Our Commercial Director was appointed as the Sponsor for the Property Appendix and the associated Cost Benefit Analyses (CBAs), Engineering Justification Papers (EJPs) and Business Plan Data Templates (BPDTs); which have been through the following levels of review and assurance:

First Line

This was undertaken at project level by the team producing the document, as a regular self-check or peer review.

Second Line

This was undertaken independently within the organisation to review and feedback on product development, including GD2 workshops on Capital Expenditure (CAPEX), CBAs and EJPs. Internal Audit reviewed the third line assurance work conducted by Ove Arup and Partners against scope.

Both Senior Manager and Director sign-off was obtained and our RIIO-GD2 Executive Committee: (1) considered the appropriateness of assurance activity for the Appendix and (2) provided assurance to SGN's Board that the Business Plan meets Ofgem's assurance requirements.

Third Line

This was undertaken by external advisors and groups providing critical challenge during the development of products within the Business Plan. In addition to the feedback and challenge provided by the Customer Engagement Group (CEG) and Customer Challenge Group (CCG) this Appendix was developed after consultation with and advice from:

Advisor / Group	Contribution
Carter Jonas	Independent review of budget land costs in GD2
Hempel	Cost estimate for gasholder maintenance work for GD2
Advisian	Environmental Summary Reports and Land Remediation Cost Estimates for GD2
Ove Arup and Partners	Consultancy support to enable development of an evidence based high quality business plan draft by acting as an expert challenge group through independent peer reviews against Ofgem Business Plan Guidance.
Consultant	Supported in the development of the Property Management cost model
Consultant	Supported in the development of CBAs: Property Management and Projects (inc Security), Renewable Energy, Energy Management and Utility Reduction
SSE Enterprise	Supported in development of LED cost model
Cogeo	Supported in development of Energy Management and Utility Reduction cost options
Chartwell	Supported in development of Biodiversity and Renewable cost options
Craddy Pitchers Ltd	Report into the refurbishment of listed gasholders including costs
Glanville Group	Property Management Cost Model Review

Fourth Line

This was undertaken by independent and impartial external providers, who provided a detailed and comprehensive report to both the Executive Committee and Board of Directors:

Advisor / Group	Contribution
Ove Arup and Partners ('Clean' Team)	Review of Appendix against Ofgem's assurance requirements.
PwC	Business Plan Data Template review: Other Capex

7 Annex

1. Annex A: Property Development opex

A third-party, independent review from Carter Jonas of budget land costs in GD2 – see supporting documents.

2. Annex B.1: Property Management opex

Our opex annex evidencing efficient costs through industry benchmarking can be found in section 6.4 of our Work Management and Business Support appendix (015).

3. Annex B.2: Security opex

Table 14:Opex annex evidencing efficient costs.

Description	2021/22 £	2022/23 £	2023/24 £	2024/25 £	2025/26 £
Man guarding	238,050	238,050	238,050	238,050	238,050
Security maintenance support agreement – offices/depots	101,750	101,750	101,750	101,750	101,750
Security maintenance support agreement – gas sites	386,100	382,200	378,300	374,400	370,500
Gallagher software licences	5,000	5,000	5,000	5,000	5,000
Automated barrier maintenance	20,000	20,000	20,000	20,000	20,000
Data communications (Onwave)	36,000	36,000	36,000	36,000	36,000
Temporary CCTV	50,000	50,000	50,000	50,000	50,000
Total	**836,900**	**833,000**	**829,100**	**825,200**	**821,300**

4. Annex B.3: Engineering Justification Paper and CBA for Property Management (including Security)

See SGN Prop 005 Property Management and Projects – EJP and SGN Prop 005 Property Management and Projects – CBA in supporting documents.

5. Annex C: Land Regeneration opex

Report into the refurbishment of listed gasholders including costs from Craddy Pitchers Ltd – see supporting document.

6. Annex D: Land Remediation opex

Table 15: Proposed work and associated costs

		Scotland	Area	Cost	Southern	Area	Cost	
Gov. workload	2021/22	3	801.6879	£365,100	2	7080.1078	£950,000	
	2022/23	3	2117.0832	£490,084	4	7080.1078	£2,880,000	
	2023/24	0	0	£0	3	15904.2954	£2,700,000	
	2024/25	0	0	£0	0	0	£0	
	2025/26	0	0	£0	0	0	£0	
		Scotland	Area	Cost	Southern	Area	Cost	
Rem. workload	2021/22	1	13042.68	£854,489	4	3699.99	£794,603	
	2022/23	3	579.9996	£1,183,818	5	2236.0732	£1,103,984	
	2023/24	4	3640.5898	£1,199,663	6	9409.6853	£1,427,094	
	2024/25	4	3006.676	£875,907	4	17319.516	£1,965,985	
	2025/26	4	1538.1738	£1,000,131	3	4103.77	£1,752,395	
		Rem.+Gov No.	Rem.+Gov Area	Cost	Rem.+Gov No.	Rem.+Gov Area	Cost	
Total Rem. Spend	2021/22	4	13844.3679	£1,219,589	6	10780.0978	£1,744,603	
	2022/23	6	2697.0828	£1,673,902	9	9316.181	£3,983,984	
	2023/24	4	3640.5898	£1,199,663	9	25313.9807	£4,127,094	
	2024/25	4	3006.676	£875,907	4	17319.516	£1,965,985	
	2025/26	4	1538.1738	£1,000,131	3	4103.77	£1,752,395	
	Sub total	22	24726.8903	£5,969,192	31	66833.5455	£13,574,061	
		No.	Area	Cost	Southern	Area	Cost	
MNA (SI&Mont)	2021/22	18	188047.6461	£450,000	13	43554.1668	£325,000	
	2022/23	18	188047.6461	£450,000	13	43554.1668	£325,000	
	2023/24	18	188047.6461	£450,000	13	43554.1668	£325,000	
	2024/25	18	188047.6461	£450,000	13	43554.1668	£325,000	
	2025/26	18	188047.6461	£450,000	13	43554.1668	£325,000	
	Sub total	90	940238.2305	£2,250,000	65	217770.834	£1,625,000	
	Grand totals:			£8,219,192			£15,199,061	£23,418,253

See SGN Site Assessment and Remediation procedure in supporting documents

7. Annex E: Estate Management opex

Table 16: Maintenance matrix

Size	Number of sites	Cost per site per year	Cost per year	GD2 requirement
Small	67	£1,100	£73,700	£368,500
Medium	32	£4,500	£144,000	£720,000
Large	25	£9,000	£225,000	£1,125,000
Very large	5	£31,500	£157,500	£787,500
Sub totals	129	n/a	£600,200	£3,001,000
Efficiency				£61,000
Total				£2,940,000

Fly tipping incident at Epsom

Estates Management Scope of Works

Fencing

- All the redundant land should fall within a defined site boundary reflected in the plans. A suitable boundary such as a fence should be installed to the perimeter where possible.
- The boundary will normally be effective to stop unauthorised access and reduce the risk of travellers, fly-tipping and vandalism to buildings and structures. The suitability of the boundary will also be influenced by the hazards on site and locality.
- Suitable fencing should also be installed around features that are considered a significant hazard such as ponds, streams and drops etc.
- Boundaries may be made up of a variety of fencing types offering differing levels of security which will be dependent on the physical nature of the site.
- Fencing should also be in good condition and free from defects that may affect the stability of the fencing/wall/structure or perimeter security. Any failings to the boundary should have immediate mitigating measures put in place and a longer-term solution identified.
- Any site that does not have a boundary fence needs to be added to the risk register and have a suitable inspection frequency applied.

Gates

- Suitable lockable gates should be installed at all access points to the site and should match the level of protection offered by the boundary.
- Where numerous breaches of the gate have occurred then road blockers should be considered.
- Dual locking and daisy chains should be installed as appropriate in co-ordination with other authorised users.
- Consider if access points on the boundary can be reduced to a single-entry point.
- Any failings to the gates should have immediate mitigating measures put in place and a longer-term solution identified.
- On larger sites it may be necessary to reduce the number of access points.

Signage

- Standard signage should be installed at all sites and be in good condition
- There are three categories of signage:

1. Perimeter signage – should be installed every 30m around the site perimeter
2. Gate signage – signs that go on gates
3. Hazard signage – specific hazard signage (such as water, drops, razor wire etc.) should be installed next to the hazard location where such hazards exist

Walls and unusual features

- Walls (of any type), bridges, tunnels, culverts, clock towers, tanks or any structure that requires planned specialist inspections
- While these features will be given a visual inspection at routine inspections, their presence should be recorded and referred to specialist inspectors for future inspection, irrespective of condition. These are usually at three to five-year intervals.
- Anything appearing to have a structural failure will be prioritised by them for inspection and corrective actions arranged. Any failings should have immediate mitigating measures put in place and a longer-term solution identified.
- Where damage has occurred, measures should be taken to identify the causes of the damage and mitigate these where possible.

Walls

- All walls should be reviewed for their use, suitability and risk.

- Internal site walls should be demolished where appropriate and where they are not protecting the boundary.
- All walls should be free from plant growth (both sides) including any plants that could undermine the foundations.
- Walls should be noted for future inspection irrespective of current condition. Walls appearing to have a structural failure will be prioritised for inspection and corrective actions arranged. Any failings to the walls should have immediate mitigating measures put in place, with a longer-term solution identified.
- Before significant works are undertaken to walls it should be confirmed whether the structures are listed and whether planning permission is required.

Buildings

- Any buildings should be reflected on the plans and will need to be protected from weather, vandalism, theft and unauthorised entry. Suitable boarding, window or door protection should be in place.
- All redundant buildings should be secured from unauthorised access; this will include ensuring that all vulnerable points of entry (such as doors and windows) are appropriately secured.
- Consideration should be given to whether any redundant buildings should be considered for demolition. These should be secured appropriately pending approval and demolition works.
- Where the condition or stability of the building could pose a risk to visitors on site, suitable mitigation measures should be put in place to prevent site visitors from accessing any point near the building envelope (this could be by the installation of Heras fencing surrounding the perimeter of the building).
- Warning signage stating 'No Unauthorised Access' should be installed at the entry points to buildings in poor condition.
- Services to redundant buildings (electrics, water and gas) and any plant (lifts, AC etc.) should be disconnected by appropriately qualified contractors. Where services or a plant have not been fully disconnected then appropriate Planned Preventative Maintenances (PPMs) schedules must be in place.
- Buildings with the potential to be put back into beneficial use should be properly managed and maintained so as not to deteriorate in condition (e.g. PPM regimes should be in place to ensure that drainage is kept clear and free flowing).

Significant hazards

- Significant hazards should be documented and recorded to advise visitors to site of potential risks. A programme to reduce the risks associated with hazards will need to be put in place along with any necessary immediate mitigation measures.
- Where significant hazard items remain, signage should be installed to warn of these hazards (such as water hazards, drops etc.)

Security inspections

- The security inspection schedule should include a minimum of two visits a year. Additional visits should be instructed in line with the site risk profile (e.g. where there are hazards on site, buildings, risk of fly tipping, unauthorised access or vandalism).

Asbestos

- All buildings require an Asbestos Management Survey to determine if present and an asbestos management plan is required with the appropriate actions in place.

Lighting columns and ancillary structures

- Lighting columns and ancillary structures (such as lighting towers, ballast pens etc.) at risk of collapse should be demolished if they are redundant.
- Where redundant lighting columns or masts are present on site, steps should be undertaken to ensure that the power supply to these items has been isolated.
- Where rights of access exist across SGN sites and lighting is installed, this lighting should be maintained in good working order.

Climbing structures

- There should be no climbing structures present on site other than those provided for the specific purpose of access during maintenance activities.
- Where climbing structures are provided for access, these should be protected from unauthorised use by the installation of ladder guards (or similar) and suitably signed.
- All elevated walkways including any area where someone could fall and cause injury must have appropriate handrails on both sides. This includes, bridges, culverts and other structures accessible to visitors.

Pernicious weeds

- All pernicious weeds and invasive species (e.g. Japanese Knotweed, Himalayan Balsam or Giant Hogweed) should be managed in accordance with relevant legislation/best practice guidance. This includes where a pernicious weed has spread, or has the potential to spread, outside of the site boundary.

Ground maintenance

- A PPM schedule should be determined dependent on the site needs. The grounds maintenance review should include:

1. At least one visit a year to remove vegetation from buildings, structures, walls and gates
2. The fence line inside the boundary cleared 2m and the cutting back of vegetation along pathways across the site
3. A review of whether the site is a Site of Specific Scientific Interest (SSSI) or has any Tree Preservation Orders (TPOs)
4. Management of any large or significant tress including the instruction of tree surveys as appropriate
5. Treatment of buddleia as appropriate to prevent damage to boundaries and structures
6. Management of the site with consideration for protected species and other flora and fauna

Fly tipping

- Removal of fly tipped material should be arranged where leaving existing fly tipped material would encourage further fly tipping or is visible to people outside the site.
- The presence of any materials likely to cause hazards or requiring special treatment (such as asbestos or other special/controlled waste) should be recorded so appropriate safety measures can be taken during its removal.

Razor wire

- On sites where razor wire exists below 2.4m it should be removed. Above this height, a standard health and safety sign should be installed by the wire.

8. Annex F: Engineering Justification Paper for Biodiversity

See SGN Prop 001 Biodiversity – EJP in supporting documents.

9. Annex G: Engineering Justification Paper for Climate Change Adaptation

See SGN Prop 002 Climate Change Adaptation – EJP in supporting documents.

10. Annex H: Engineering Justification Paper for Renewable Energy, with associated CBA

See SGN Prop 003 Renewable Energy – EJP and SGN Prop 003 Renewable Energy – CBA in supporting documents.

11. Annex I: Engineering Justification Paper for Estate Management and Utility Reduction, with associated CBA

See SGN Prop 004 Energy Management and Utility Reduction – EJP and SGN Prop 004 Energy Management and Utility Reduction – CBA in supporting documents.

8 Glossary

All acronyms and associated descriptions can be found within the Glossary appendix.